Caribou Tagging on the Koukdjuak River

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Northwest Territories Renewable Resources

The Honourable Nellie Cournoyea, Minister

Text by:
Cathy Stephenson
and Ed Hall

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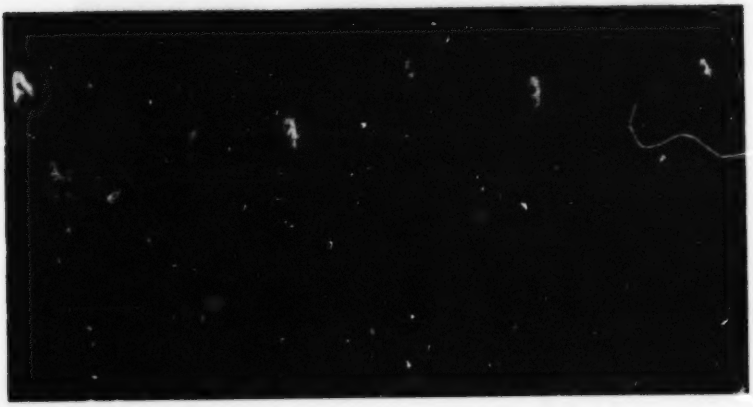
Unanswered Questions

Barren-ground caribou occupy almost every part of Baffin Island. For thousands of years their local distribution and movements have been known intimately by the Inuit, who relied on them for clothing, bedding and food. The overall picture, however, of long distance migrations, and the relationships among the various populations, remained uncertain. Historically, the record of caribou distribution on Baffin Island has been ever-changing. On Foxe Peninsula caribou were virtually non-existent early in this century. Now for reasons unknown, they are found there in substantial numbers.



The Great Plain of the Koukdjuak is a summering area for barren-ground caribou.

Harsh weather and rugged terrain on Baffin Island have hampered the use of systematic aerial surveys, which are a standard method of study on the mainland. Consequently, when a suitable tagging site was found in 1974, the Department of Renewable Resources of the Government of the Northwest Territories embarked on a long-range tagging program.

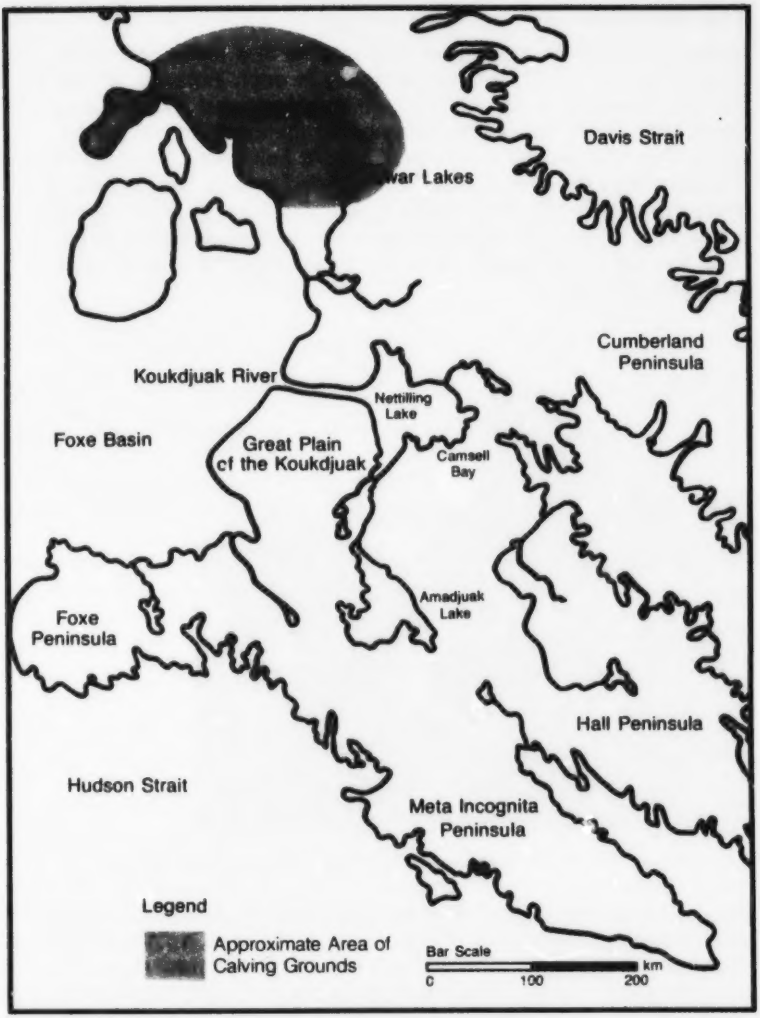
Many questions have since been answered, but many more remain.

The Site

The Great Plain of the Koukdjuak is a vast, flat lowland dotted with many ponds and interlaced with small sluggish streams. About half the plain is protected as a migratory bird sanctuary. It provides nesting sites for the largest snow goose colony in the world, as well as for eiders, oldsquaws, sandpipers, terns, and many other migratory birds. It is also an important summering area for caribou.

The Great Plain of the Koukdjuak is an important nesting area for waterfowl and shorebirds.

Crossing the plain from east to west is the Koukdjuak River. Wider than five kilometres in some places, it is shallow and interspersed with many small islands and rocky reefs. In the summer it acts as an obstacle to migrating cows and calves, which are returning south from the calving grounds. When the tagging program began, it was unknown whether caribou from all over Baffin Island used these calving grounds, or whether they were used only by caribou from a particular area.



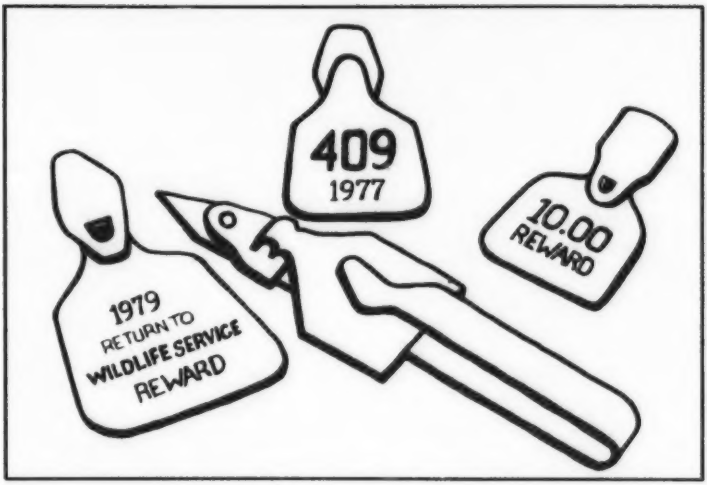
Southern Baffin island, Northwest Territories

The Method

Marking animals to study their movements is a technique used throughout the world. A major difficulty in each instance is how to get close enough to do the work. In the Northwest Territories, polar bears have been ear-tagged after being immobilized by a drug which was injected by a dart shot from a helicopter. With caribou, however, the use of drugs can be avoided by approaching them while they are swimming. Using a device similar to a shepherd's crook, each animal is captured and held against the side of the boat. For an experienced crew, the actual tagging usually takes less than a minute.

A swimming caribou is pulled alongside a boat and held briefly while being tagged.

From 1974 to 1976, aluminum ear tags and/or plastic neck bands were placed on caribou at the Koukdjuak River. In 1976 ear tags made of red plastic were tried, and from 1977 to 1982 these tags were used exclusively. They are applied with a knife-like instrument which makes a slit in the ear and inserts the tag at the same time. A number and the year of capture is printed on each tag.



The tags and applicator used in some years during the tagging project.

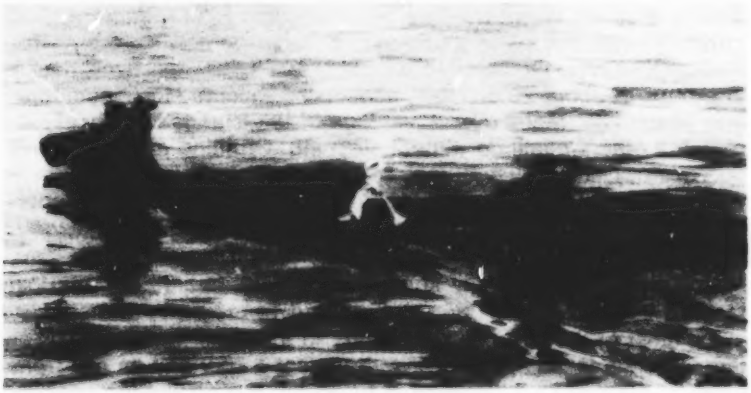
The most difficult part of the job is locating caribou as they cross the river. The tagging crew keeps a lookout from their base camp using a spotting scope set up on the roof of a cabin. Patrols are also made down the river. Since the caribou cross the river in irregular patterns, in all kinds of weather, and during the day and night, the crew must be in the right place at the right time.

Caribou cross the river in July and August on their way south from calving grounds in the Dewar Lakes/Longstaff Bluff area. They arrive in small groups and spread out along the north shore of the Koukdjuak River. Eventually they strike out across the river, usually in groups of about 20 animals, although sometimes their numbers may reach 200. Many take advantage of the islands for a brief rest, but others continue without stopping. Grunting and swimming purposefully, the actual journey takes less than a half-hour. For some animals the exertion is too much. Every year a small proportion drown in the attempt, or succumb to exhaustion or exposure. If there is still ice in the river when the caribou cross, more die than usual from injuries.

Most of the caribou encountered at the river are cows and calves since most of the bulls do not appear to travel as far north. The tagging crew takes special care to prevent a cow and its calf from being separated when tagging is going on. If a separation seems unavoidable, the calf is placed in the canoe and returned to its mother when she is released.

The base camp on the Koukdjuak River used for the caribou tagging project.

Each year the crew spends about a month tagging, doing an average of 386 animals per year. During the period 1974 to 1981, a total of 2732 caribou were tagged or collared on the Koukdjuak River.



A cow with her calf swimming across the Koukdjuak River.

Caribou Tagged on the Koukdjuak River 1974 to 1981.

1974	27
1975	426
1976	350
1977	533
1978	325
1979	234
1980	421
1981	416
Total	2732

Some other details learned during the course of the tagging program were:

a) Of the caribou tagged, about 58% were cows, 18% were calves, 14% were bulls, 8% were yearlings and 2% were of unknown sex and age.

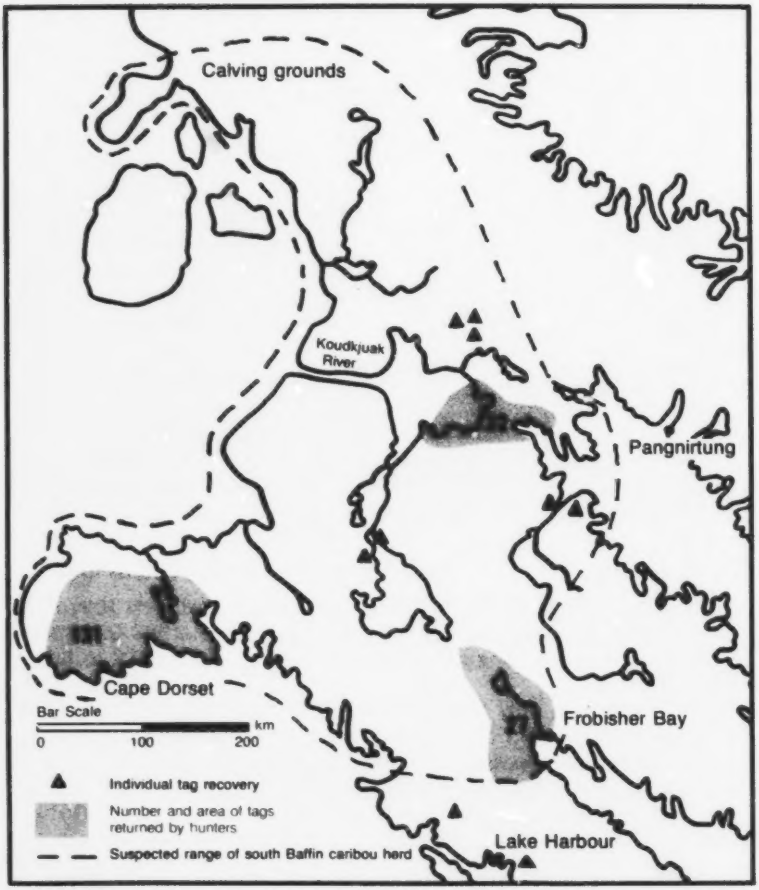
b) It is estimated that at least 62% of the cows bore calves each year.

c) Of the calves born, it is estimated that 21% died before they reached the Koukdjuak River.

Tag Returns

Tagging caribou is only half the story. The essential second part is the return of tags from caribou shot by hunters. The date and location of the kill reveals information about the caribou's movements after it has been tagged. To encourage hunters to bring in their tags, a reward of $10 per tag has been given. By June of 1982 about 8% of the tags (or 224) had been returned.

The tags come from three main areas: Foxe Peninsula, which is hunted mainly by the people of Cape Dorset; the area between Frobisher Bay and Amadjuak Lake, which is hunted by people from Frobisher Bay; and the area between Nettilling Lake and Cumberland Sound, which is hunted by Pangnirtung people.



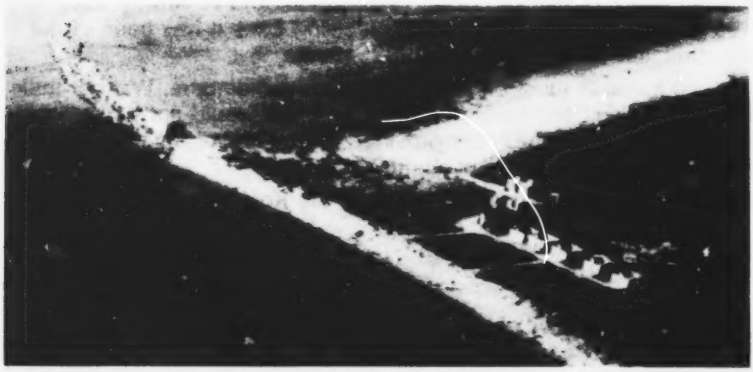
The number and areas of ear tags returned by hunters on southern Baffin Island from 1974 to 1981.

These returns are as much an indication of hunting areas as they are of areas frequented by caribou. However, the virtual absence of tag returns from other communities is in itself an important piece of evidence that tagged caribou do not use these areas. By using the calving grounds and the three tag return areas as reference points, it has been possible to sketch in the suspected range of the south Baffin migratory herd. The resulting map suggests that the caribou of northern Baffin Island belong to a separate population which does not use the calving grounds in the Dewar Lakes/Longstaff Bluff area. It also suggests that caribou found on Meta Incognita and Hall Peninsulas belong to a different population. The latter conclusion is supported by the

observations of many Inuit hunters who have seen caribou calving in various parts of Hall Peninsula.

Other details relating to tag returns are:

a) As of June 1982, Cape Dorset accounted for 67% of the returns, Pangnirtung 16%, Frobisher Bay 14%, Lake Harbour 1.5% and Broughton Island 1.5%.
b) The average interval between tagging and tag returns was 26 months.
c) The maximum distance between the tagging site and the location where a tagged caribou was shot was 450 kilometres.
d) Tagged caribou were shot at all times of the year. However, most returns came from kills made between December and May.



The Work Continues

The caribou which winter on Foxe Peninsula and in the vicinity of Amadjuak and Nettilling Lakes move north to their calving grounds in late winter and spring. The majority of bulls apparently neither travel as far north as the cows nor migrate as early. Many remain in the area of the Great Plain of the Koukdjuak and Amadjuak Lake during the summer.

Calving occurs in June, after which the cows and calves begin heading south again. When they reach Nettilling Lake they travel in two possible directions. Some head down the west side until they reach the Koukdjuak River while others move down the east side of the lake through the throng of islands in Camsell Bay.

To gain a clearer understanding of the relationship between these two migration routes, tagging took place on the east side of Nettilling Lake for the first time in 1982 and continued there again in 1983. Small, round, blue tags were used for most caribou in 1983, and will probably be used on all caribou tagged on the east side in the future. Tagging was also conducted on the Koukdjuak River in 1982, but in 1983 for the first time in 10 years, tagging was not attempted there.

For Further Information

The reader is invited to contact the Department of Renewable Resources for a screening of the film, *Koukdjuak Crossing,* which shows the tagging crew in action and summarizes the information obtained as a result of the program.

For more detailed information, the reader should refer to the report entitled *Caribou Tagging on the Koukdjuak River, Baffin Island, N.W.T. A Summary and Analysis of Tag Returns.* This report is available free from any office of the Department of Renewable Resources.

Acknowledgements

The tagging program was initiated in 1974 by E. Land and A. Bourque. In subsequent years it was carried out by R. Redhead (1975, 1976), R. Popko (1977, 1978, 1979), and P. Kraft (1980, 1981, 1982). On the east side of Nettilling Lake it has been under the direction of M. Ferguson (1982, 1983).

Special mention must be made of the crew members. Without their dedication, skill and hard work, this program would not have met with the success it has, nor provided the quality of data necessary for caribou management on Baffin Island.

Crew members who have assisted on the Koukdjuak River are:

Frobisher Bay
I. Iklaukjuak
Kiniyook
A. Nowdlak
J. Papatsie
G. Veevee

Cape Dorset
K. Curley
Q. Petualassie
M. Saviakjuk

Pangnirtung
P. Etuangat
M. Keeshak
M. Kooneelusie
L. Kudluarjuk

Lake Harbour
L. Eyeevadlook
S. Killiktee

Thanks must also be given to the Hunters and Trappers Associations of Cape Dorset, Frobisher Bay, Lake Harbour and Pangnirtung, who have supported the project, aided in the selection of crew members, and made a number of recommendations for improvements in the study.